National Climatic Data Center

DATA DOCUMENTATION

FOR

DATA SET 1183 (DSI-1183)

**International Maritime Meteorological Tape (IMMT) Global
Collection Centers**

March 20, 2003

National Climatic Data Center
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Asheville, NC 28801-5001 USA

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Table of Contents

1.   **Abstract**: None provided in original documentation. This data is also archived in DSI-1129 in a modified format.

See also **http://www.meteo.ru/data/est_sdat.htm**   and

http://www.soc.soton.ac.uk/JRD/MET/VOSCLIM/vosclim3/vosclim3_Doc_2.2_codes.pdf

2.   **Element Names and Definitions**:

In the following data description, when using fractions of units, all decimal points are implied. Unless otherwise specified, missing data are represented by blanks.

Format/Temperature Indicator (i_T)
Coded value that best describes rounding method of temperatures.

3 =   IMMT format with temperatures in tenths of degrees Celsius
4 =   IMMT format with temperatures in halves of degrees Celsius
5 =   IMMT format with temperatures in whole degrees Celsius

Year (AAAA)

Four digits for the year (UTC) in which the data are observed.

Month (MM)

The month (UTC) in which the data are observed. Range of values is from 01 to 12.

Day (YY)

Day (UTC) of the month in which the data are observed. Range of values is from 01 to 31.

Hour (GG)

The time the observation is made, to the nearest hour (UTC). Range of values is from 00 to 23.

Quadrant (Q_C) (Code table 3333)

Quadrant of the globe.

1 =   North Latitude, East Longitude
3 =   South Latitude, East Longitude
5 =   South Latitude, West Longitude
7 =   North Latitude, West Longitude

Latitude ($L_aL_aL_a$)

Latitude in whole degrees and tenths. Range of values is from 000 to 900.

Longitude ($L_oL_oL_oL_o$)

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Longitude in whole degrees and tenths. Range of values is from 0000 to
1800.

Cloud Height/Visibility Indicator

Coded value that describes cloud height and visibility measurement
methods.

0 =   h and VV estimated, or h estimated and VV missing, or h missing
      and VV estimated
1 =   h measured, VV estimated, or h measured and VV missing
2 =   h and VV measured, or h missing and VV measured
3 =   h estimated, VV measured

Height of Lowest Cloud (h)

Estimated height of the lowest cloud base.

0 =   0 to 50 m
1 =   50 to 100 m
2 =   100 to 200 m
3 =   200 to 300 m
4 =   300 to 600 m
5 =   600 to 1000 m
6 =   1000 to 1500 m
7 =   1500 to 2000 m
8 =   2000 to 2500 m
9 =   2500 m or more, or no clouds
/ =   Height of base of cloud not known or base of clouds at a level
      lower and tops at a level higher than that of the station.

Visibility (VV)

The greatest distance from the observer that an object of known
characteristics can be seen and identified.

Code	KM	Code	KM	Code	KM
00	< 0.1	19	1.9	38	3.8
01	0.1	20	2	39	3.9
02	0.2	21	2.1	40	4
03	0.3	22	2.2	41	4.1
04	0.4	23	2.3	42	4.2
05	0.5	24	2.4	43	4.3
06	0.6	25	2.5	44	4.4
07	0.7	26	2.6	45	4.5
08	0.8	27	2.7	46	4.6
09	0.9	28	2.8	47	4.7
10	1	29	2.9	48	4.8
11	1.1	30	3	49	4.9
12	1.2	31	3.1	50	5
13	1.3	32	3.2	51-55	Not used
14	1.4	33	3.3	56	6
15	1.5	34	3.4	57	7
16	1.6	35	3.5	58	8
17	1.7	36	3.6	59	9
18	1.8	37	3.7	60	10

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```
61    11                        67    17
62    12                        68    18
63    13                        69    19
64    14                        70    20
65    15                        71    21
66    16                        72    22
73    23
74    24
75    25
76    26
77    27
78    28
79    29
80    30
81    35
82    40
83    45
84    50
85    55
86    60
87    65
88    70
89    > 70
90    < 0.05
91    0.05
92    0.2
93    0.5
94    1
95    2
96    4
97    10
98    20
99    > or = 50
```

Total Cloud Amount (N)

A straightforward estimate in eighths (oktas) of how much of the sky is
covered with clouds.

Code   Fraction of sky covered

```
0 =    Cloudless
1 =    1 eighth or less, but not zero
2 =    2 eighths
3 =    3 eighths
4 =    4 eighths
5 =    5 eighths
6 =    6 eighths
7 =    7 eighths or more, but not totally covered
8 =    8 eighths, sky completely covered by clouds
9 =    sky obscured by fog, snow, or other meteorological phenomena
/ =    Cloud cover indiscernable for reasons other than code 9, or
       observation is not made.
```

Wind Direction (dd)

The average direction of the wind over the ten minute period immediately

preceding the observation. Reported in tens of degrees.

```
Code   Direction
00     Calm
01     5 - 14 degrees
02     15 - 24 degrees
03     25 - 34 degrees
04     35 - 44 degrees
05     45 - 54 degrees
06     55 - 64 degrees
07     65 - 74 degrees
08     75 - 84 degrees
09     85 - 94 degrees
10     95 - 104 degrees
11     105 - 114 degrees
12     115 - 124 degrees
13     125 - 134 degrees
14     135 - 144 degrees
15     145 - 154 degrees
16     155 - 164 degrees
17     165 - 174 degrees
18     175 - 184 degrees
19     185 - 194 degrees
20     195 - 204 degrees
21     205 - 214 degrees
22     215 - 224 degrees
23     225 - 234 degrees
24     235 - 244 degrees
25     245 - 254 degrees
26     255 - 264 degrees
27     265 - 274 degrees
28     275 - 284 degrees
29     285 - 294 degrees
30     295 - 304 degrees
31     395 - 314 degrees
32     315 - 324 degrees
33     325 - 334 degrees
34     335 - 344 degrees
35     345 - 354 degrees
36     355 - 4 degrees
99     variable, or all directions
```

Wind Speed Indicator (i_w)

Indicator for source and units of wind speed.

```
3 =   Wind speed estimated, units are knots
4 =   Wind speed obtained from anemometer, units are knots
```

Wind Speed (ff)

The average speed of the wind over the ten minute period immediately preceding the observation. Reported in tens and units of knots or meters per second, hundreds omitted, values in excess of 99 knots are indicated in units of meters per second and I_w encoded accordingly. Range of values from 00 to 99.

Sign of Dry Bulb (s_n)

:
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Sign of temperature.

```
0 =   Positive or zero
1 =   Negative
9 =   Relative humidity follows
```

Dry Bulb Temperature (TTT)

Air temperature in degrees and tenths Celsius.

Sign of Dew Point (s_t)

Sign of dew point temperature.

```
0 =   positive or zero measured dew-point temperature
1 =   negative measured dew-point temperature
2 =   iced measured dew-point temperature
5 =   positive or zero computed dew-point temperature
6 =   negative computed dew-point temperature
7 =   iced computed dew-point temperature
```

Dew Point Temperature ($T_dT_dT_d$)

Dew point temperature in degrees and tenths Celsius.

Sea Level Pressure (PPPP)

Sea-level pressure, in millibars and tenths. If value is 1000.0 millibars or greater, the thousands digit is omitted. For example: a pressure of 1014.3 would be coded 0143 and 994.6 would be coded 9946.

Present Weather (ww)

Present weather refers to the atmospheric phenomena which are occurring at the time of observation, or which have occurred during the hour preceding the time of observation.

```
00 =  Cloud development not observed.
01 =  Clouds generally dissolving or becoming less developed.
02 =  State of the sky unchanged.
03 =  Clouds generally forming or developing.
04 =  Visibility reduced by smoke.
05 =  Haze
06 =  Widespread dust in suspension in the air, not raised by wind, at
      or near the station at the time of observation.
07 =  Dust or sand raised by wind at or near the station at the time of
      observation, but no well developed dust whirls or sand whirls and
      no duststorm or sandstorm seen.
08 =  Well developed dust whirls or sand whirls seen at or near the
      station during the preceding hour or at the time of observation,
      but no duststorm or sandstorm.
09 =  Duststorm or sandstorm within sight at the time of observation, or
      at the station during the preceding hour.
10 =  Light fog (visibility 1,100 yards or more).  Synonymous with
      European term "Mist".
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11 =   Patches of shallow fog or ice fog at the station, not deeper than
       about 10 meters.
12 =   More or less continuous shallow fog or ice fog at the station, not
       deeper than about 10 meters.
13 =   Lightning visible, no thunder heard.
14 =   Precipitation within sight, not reaching the surface of the sea.
15 =   Precipitation within sight, reaching the surface of the sea, but
       more than 5 km. from the ship.
16 =   Precipitation within sight, reaching the surface of the sea, near
       to, but not at the ship.
17 =   Thunderstorm, but no precipitation at the time of observation.
18 =   Squalls at or within sight of the ship during the preceding hour
       or at the time of observation.
19 =   Funnel cloud or Waterspout at or within sight of the ship during
       the preceding hour or at the time of observation.

Present weather codes 20-29 refer to phenomena occurring at the ship
during the preceding hour but not at the time of observation.

20 =   Drizzle (not freezing) or snow grains.
21 =   Rain (not freezing).
22 =   Snow
23 =   Rain and snow or ice pellets.
24 =   Freezing drizzle or freezing rain.
25 =   Shower(s) of rain.
26 =   Shower(s) of snow or of rain and snow.
27 =   Shower(s) of hail (ice pellets, snow pellets), or of rain and hail
       (ice pellets, snow pellets).
28 =   Fog or ice fog.
29 =   Thunderstorm (with or without precipitation).

Present weather codes 30-99 refer to phenomena occurring at the ship at
time of observation.

30 =   Slight or moderate duststorm or sandstorm has decreased during the
       preceding hour.
31 =   Slight or moderate duststorm or sandstorm, no appreciable change
       during the preceding hour.
32 =   Slight or moderate duststorm or sandstorm has begun or has
       increased during the preceding hour.
33 =   Severe duststorm or sandstorm has decreased during the preceding
       hour.
34 =   Severe duststorm or sandstorm, no appreciable change during the
       preceding hour.
35 =   Severe duststorm or sandstorm has begun or has increased during
       the preceding hour.
36 =   Slight or moderate drifting snow generally low (below eye level)
       less than 6 feet.
37 =   Heavy drifting snow generally low (below eye level) less than 6
       feet.
38 =   Slight or moderate blowing snow generally high (above eye level) 6
       feet or more.
39 =   Heavy blowing snow generally high (above eye level) 6 feet or
       more.
40 =   Fog or ice fog at a distance at the time of observation, but not
       at the ship during the preceding hour, the fog or ice fog
       extending to a level above that of the observer.
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41 =  Fog or ice fog in patches.
42 =  Fog or ice fog, sky visible has become thinner during the
         preceding hour.
43 =  Fog or ice fog, sky invisible has become thinner during the
         preceding hour.
44 =  Fog or ice fog, sky visible no appreciable change during the
         preceding hour.
45 =  Fog or ice fog, sky invisible no appreciable change during the
         preceding hour.
46 =  Fog or ice fog, sky visible has begun or has become thicker during
         the preceding hour.
47 =  Fog or ice fog, sky invisible has begun or has become thicker
         during the preceding hour.
48 =  Fog, depositing rime, sky visible.
49 =  Fog, depositing rime, sky invisible.
50 =  Drizzle, not freezing, intermittent slight at time of observation.
51 =  Drizzle, not freezing, continuous slight at time of observation.
52 =  Drizzle, not freezing, intermittent moderate at time of
         observation.
53 =  Drizzle, not freezing, continuous moderate at time of observation.
54 =  Drizzle, not freezing, intermittent heavy (dense) at time of
         observation.
55 =  Drizzle, not freezing, continuous heavy (dense) at time of
         observation.
56 =  Drizzle, freezing, slight.
57 =  Drizzle, freezing, moderate or heavy (dense).
58 =  Drizzle and rain, slight.
59 =  Drizzle and rain, moderate or heavy.
60 =  Rain, not freezing, intermittent, slight at time of observation.
61 =  Rain, not freezing, continuous, slight at time of observation.
62 =  Rain, not freezing, intermittent, moderate at time of observation.
63 =  Rain, not freezing, continuous, moderate at time of observation.
64 =  Rain, not freezing, intermittent, heavy at time of observation.
65 =  Rain, not freezing, continuous, heavy at time of observation.
66 =  Rain, freezing, slight.
67 =  Rain, freezing, moderate or heavy.
68 =  Rain or drizzle and snow, slight.
69 =  Rain or drizzle and snow, moderate or heavy.
70 =  Intermittent fall of snowflakes.
71 =  Continuous fall of snowflakes slight at time of observation.
72 =  Intermittent fall of snowflakes moderate at time of observation.
73 =  Continuous fall of snowflakes moderate at time of observation.
74 =  Intermittent fall of snowflakes heavy at time of observation.
75 =  Continuous fall of snowflakes heavy at time of observation.
76 =  Ice prisms (with or without fog).
77 =  Snow grains (with or without fog).
78 =  Isolated starlike snow crystals (with or without fog).
79 =  Ice pellets
80 =  Rain shower(s), slight.
81 =  Rain shower(s), moderate or heavy.
82 =  Rain shower(s), violent.
83 =  Shower(s) of rain and snow mixed, slight.
84 =  Shower(s) or rain and snow mixed, moderate or heavy.
85 =  Snow shower(s), slight.
86 =  Snow shower(s), moderate or heavy.
87 =  Slight showers of snow pellets or ice pellets, with or without
         rain or rain and snow mixed.
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88 = Moderate or heavy showers of snow pellets or ice pellets, with or without rain or rain and snow mixed.
89 = Slight showers of hail with or without rain or rain and snow mixed, not associated with thunder.
90 = Moderate or heavy showers of hail, with or without rain or rain and snow, slight mixed, not associated with thunder.
91 = Slight rain at time of observation, thunderstorm during preceding hour but not at observation.
92= Moderate or heavy rain at time of observation, thunderstorm during preceding hour but not at observation.
93 = Slight snow, or rain and snow mixed or hail, at time of observation with thunderstorm during the preceding hour but not at time of observation.
94 = Moderate or heavy snow, or rain and snow mixed, or hail, at time of observation with thunderstorm during the preceding hour but not at time of observation.
95 = Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation.
96 = Thunderstorm, slight or moderate, with hail at time of observation.
97 = Thunderstorm, heavy, without hail but with rain and/or snow at time of observation.
98 = Thunderstorm combined with duststorm or sandstorm at time of observation.
99 = Thunderstorm, heavy, with hail at time of observation.

Primary Past Weather (W_1)

Past weather refers to the type(s) of weather which occurred since the previous main synoptic hour. If two or more type of reportable weather occurred during the period, only the two highest code figures are encoded; the highest code figure for W_1, the second highest for W_2.

0 = Cloud covering 1/2 or less of the sky throughout the appropriate period.
1 = Cloud covering more than 1/2 of the sky during part of the appropriate
period and covering 1/2 or less during part of the period.
2 = Cloud covering more than 1/2 of the sky throughout the appropriate period.
3 = Sandstorm, duststorm or blowing snow.
4 = Fog or ice fog or thick haze.
5 = Drizzle
6 = Rain
7 = Snow, or rain and snow mixed.
8 = Shower
9 = Thunderstorm with or without precipitation.

Secondary Past Weather (W_2)

See Primary Past Weather. Reported in the same manner.

Amount of Low or Middle Cloud (N_h)

As reported for low clouds, or if none are present, middle clouds, in oktas.

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Code Fraction of sky covered

0 =   Cloudless
1 =   1 eighth or less, but not zero
2 =   2 eighths
3 =   3 eighths
4 =   4 eighths
5 =   5 eighths
6 =   6 eighths
7 =   7 eighths or more, but not totally covered
8 =   8 eighths, sky completely covered by clouds
9 =   sky obscured by fog, snow, or other meteorological phenomena
/ =   Cloud cover indiscernable for reasons other than code 9, or
      observation is not made.

Type of Low Cloud (C_l)

A visual observation measuring clouds of type Stratocumulus, Stratus,
Cumulus and Cumulonimbus.

0 =   No Stratocumulus, Stratus, Cumulus or Cumulonimbus.
1 =   Cumulus with little vertical extent and seemingly flattened, or
      ragged Cumulus other than of bad weather, or both.
2 =   Cumulus of moderate or strong vertical extent, generally with
      protuberances in the form of domes or towers, either accompanied
      or not by other Cumulus or by Stratocumulus, all having their base
      at the same level.
3 =   Cumulonimbus, the summits of which, at least partially, lack sharp
      outlines but are neither clearly fibrous (cirriform) nor in the
      form of an anvil; Cumulus, Stratocumulus or Status may also be
      present.
4 =   Stratocumulus formed by the spreading out of Cumulus; Cumulus may
      also be present.
5 =   Stratocumulus not resulting from the spreading out of Cumulus.
6 =   Stratus in a more or less continuous sheet or layer, or in ragged
      shreds, or both, but no Stratus fractus of bad weather.
7 =   Stratus fractus of bad weather (generally existing during
      precipitation and a short time before and after) or Cumulus
      fractus of bad weather, or both (pannus), usually below
      Altostratus or Nimbostratus.
8 =   Cumulus and Stratocumulus other than that formed from the
      spreading out of Cumulus; the base of the Cumulus is at a
      different level from that of the Stratocumulus.
9 =   Cumulonimbus, the upper part of which is clearly fibrous
      (cirriform), often in the form of an anvil; either accompanied or
      not by Cumulonimbus without anvil or fibrous upper part by
      Cumulus, Stratocumulus, Stratus or pannus.
/ =   Stratocumulus, Stratus, Cumulus and Cumulonimbus invisible owing
      to darkness, fog, blowing dust or sand, or other similar
      phenomena.

Type of Middle Cloud (C_m)

A visual observation measuring clouds of type Altocumulus, Altostratus
and Nimbostratus.

0 =   No Atlocumulus, Altostratus or Nimbostratus.

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1 =   Altostratus, the greater part of which is semi-transparent;
       through this part the sun or moon may be weakly visible, as
       through ground glass.
2 =   Altostratus, the greater part of which is sufficiently dense to
       hide the sun or moon, or Nimbostratus.
3 =   Altocumulus, the greater part of which is semi-transparent; the
       various elements of the cloud change only slowly and are all at a
       single level.
4 =   Patches (often in the form of almonds or fishes) of Altocumulus,
       the greater part of which is semi-transparent; the clouds occur at
       one or more levels and the elements are continually changing in
       appearance.
5 =   Semi-transparent Altocumulus in bands, or Altocumulus in one or
       more fairly continuous layers (semi-transparent or opaque),
       progressively invading sky; these Altocumulus clouds generally
       thicken as a whole.
6 =   Altocumulus resulting from the spreading out of Cumulus (or
       Cumulonimbus).
7 =   Altocumulus in two or more layers, usually opaque in places, and
       not progressively invading the sky; or opaque layer of
       Altocumulus, not progressively invading the sky; or Altocumulus
       together with Altostratus or Nimbostratus.
8 =   Altocumulus with sproutings in the form of small towers or
       battlements; or Altocumulus having the appearance of cumuliform
       tufts.
9 =   Altocumulus of a chaotic sky, generally at several levels.
/ =   Altocumulus, Altostratus and Nimbostratus invisible owing to
       darkness, fog, blowing dust or sand or other similar phenomena, or
       more often because of the presence of a continuous layer of lower
       clouds.

Type of High Cloud (C_h)

A visual observation of clouds of type Cirrus, Cirrocumulus and
Cirrostratus.

0 =   No Cirrus, Cirrocumulus or Cirrostratus
1 =   Cirrus in the form of filaments, strands or hooks, not
       progressively invading sky.
2 =   Dense Cirrus, in patches or entangled sheaves, which usually do
       not increase and sometimes seem to be the remains of the upper
       part of a Cumulonimbus; or Cirrus with sproutings in the form of
       small turrets or battlements, or Cirrus having the appearance of
       cumuliform tufts.
3 =   Dense Cirrus, often in the form of an anvil, being the remains of
       the upper parts of Cumulonimbus.
4 =   Cirrus in the form of hooks or of filaments, or both,
       progressively invading the sky; they generally become denser as a
       whole.
5 =   Cirrus (often in bands converging towards one point or two
       opposite points of the horizon) and Cirrostratus, or Cirrostratus
       alone; in either case, they are progressively invading the sky,
       and generally growing denser as a whole, but the continuous veil
       does not reach 45 degrees above the horizon.
6 =   Cirrus (often in bands converging towards one point or two
       opposite points of the horizon) and Cirrostratus, or Cirrostratus
       alone; in either case, they are progressively invading the sky,

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:   13:
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and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered.

7 =   Veil of Cirrostratus covering the celestial dome.

8 =   Cirrostratus not progressively invading the sky and not completely covering the celestial dome.

9 =   Cirrocumulus alone, or Cirrocumulus accompanied by Cirrus or both, but Cirrocumulus is predominant. Cirrostratus, invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

/ =   Cirrus, Cirrocumulus and Cirrostratus invisible owing to darkness, or because of a continuous layer of lower clouds.

Sign of Sea-surface Temperature (s_n)

Sign of sea-surface temperature.

0 =   Positive or zero
1 =   Negative
9 =   Relative humidity follows

Sea Temperature ($T_w T_w T_w$)

Sea-surface water temperature in degrees and tenths Celsius.

Sea-surface Temperature Indicator

Coded value that describes sea-surface temperature measurement.

0 =   Bucket thermometer
1 =   Condenser inlet
2 =   Trailing thermistor
3 =   Hull contact sensor
4 =   "Through the hull" sensor
5 =   Radiation Thermometer
6 =   Bait tanks thermometer
7 =   Others
9 =   Unknown

Wave Measurement Indicator

Coded value that describes method of wave measurement.

0 =   Shipborne wave recorder, wind sea and swell estimated
1 =   Shipborne wave recorder, wind sea and swell measured
2 =   Shipborne wave recorder, mixed wave measured, swell estimated
3 =   Shipborne wave recorder, other combinations measured and estimated
4 =   Buoy, wind sea and swell measured
5 =   Buoy, mixed wave measured, swell estimated
6 =   Buoy, other combination measured and estimated
7 =   Other measurement system, wind sea and swell measured
8 =   Other measurement system, mixed wave measured, sell estimated
9 =   Other measurement system, other combinations measured and estimated

Period of Wind Waves ($P_w P_w$)

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Period of wind waves, in seconds. Values range from 00 to 99 or //.

Height of Wind Waves (H_wH_w)

Height of wind waves, in half meters, represents the average height of the larger well-formed wind waves. Examples: Calm or less than 1/4 m to be encoded 00; 3 1/2 m to be encoded 07; 7 m to be encoded 14; 11 1/2 m to be encoded 23.

Predominant Swell Direction ($d_{w1}d_{w1}$)

Direction of primary swell in tens of degrees. Use code table for wind direction (dd). Blanks = No observation of waves attempted.

Period of Predominant Swell ($P_{w1}P_{w1}$)

Period of the primary swell in seconds. Values range from 00 to 28 or 99. See P_wP_w.

Height of Primary Swell ($H_{w1}H_{w1}$)

The average height of larger well-formed swell in half-meters. Values range from 00 to 28 or //. See Height of Wind Waves (H_wH_w).

Causes of Ice Accretion (I_s)

Reports the cause of ice accretion on ship.

```
1 =   Icing from ocean spray
2 =   Icing from fog
3 =   Icing from spray and fog
4 =   Icing from rain
5 =   Icing from spray and rain
```

Thickness of Ice Accretion (E_sE_s)

Thickness of ice accretion in centimeters. Values range from 00 to 29.

Rate of Ice Accretion (R_s)

Description of the rate of ice accretion.

```
0 =   Ice not building up
1 =   Ice building up slowly
2 =   Ice building up rapidly
3 =   Ice melting or breaking up slowly
4 =   Ice melting or breaking up rapidly
```

Source of Observation

The method by which the observation was sent.

```
Code   Source
0 =    Unknown
1 =    Logbook, National
2 =    Telecommunication channels, National
```

```
3 =    Publications, National
4 =    Logbook, International data exchange
5 =    Telecommunication channels, International data exchange
6 =    Publications, International data exchange
```

Observation Platform
Type of station making the observation.

```
0 =    Unknown
1 =    Selected ship
2 =    Supplementary ship
3 =    Auxiliary ship
4 =    Automated station/data buoy
5 =    Fixed sea station
6 =    Coastal station
7 =    Aircraft
8 =    Satellite
9 =    Others
```

Ship Identifier

The ship's radio call sign. A unique four to seven digit identifier consisting of letters and numbers. Call sign is left justified in this field.

Recruiting Country

Country which has recruited the ship, according to numbers assigned by the WMO.

National Use

This position is left blank.

Quality Control Indicator

Describes type of quality control that has been performed on data.

```
Code   Indicator
0 =    No quality control (QC)
1 =    Manual QC only
2 =    Automated QC only (no time-sequence checks)
3 =    Automated QC only (including time-sequence checks)
4 =    Manual and automated QC (superficial; no automated time-sequence
       checks)
5 =    Manual and automated QC (superficial; including automated time-
       sequence checks)
6 =    Manual and automated QC (intensive; including automated time-
       sequence checks)
9 =    National System of QC (information to be furnished to WMO)
```

Weather Data Indicator (i_x)

Describes if weather data is included in report.

```
1 =    Manual
3 =    Manned (no observation or data not available)
```

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:   16:

Precipitation Data Indicator (i_R)

Indicator for inclusion or omission or precipitation data. Not used for
U.S. data. Always coded as four for omitted.

Precipitation Amount (RRR)

Amount of precipitation which has fallen during the period preceding the
time of observation. Not used for U.S. data.

Precipitation Duration (t_R)

Duration or period of reference for amount of precipitation, ending at
the time of the report. Not used for U.S. data.

Sign of Wet Bulb (S_w)

Sign of wet bulb temperature.

0 =   Positive or zero measured wet-bulb temperature
1 =   negative measured wet-bulb temperature
2 =   iced measured wet-bulb temperature
5 =   positive or zero computed wet-bulb temperature
6 =   negative computed wet-bulb temperature
7 =   iced computed wet-bulb temperature

Wet Bulb Temperature ($T_bT_bT_b$)

Wet bulb temperature, degrees and tenths celsius.

Pressure Change Characteristic (a)

Pressure characteristic during the three hours before observation time.

0 =   Increasing, then decreasing; atmospheric pressure same or higher
      than 3 hours ago.
1 =   Increasing, then steady; or increasing then increasing more
      slowly; atmospheric pressure now higher than 3 hours ago.
2 =   Increasing (steadily or unsteadily) atmospheric pressure now
      higher than 3 hours ago.
3 =   Decreasing or steady, then increasing; or increasing then
      increasing more rapidly; atmospheric pressure now higher than 3
      hours ago.
4 =   Steady; atmospheric pressure same as 3 hours ago.
5 =   Decreasing, then increasing; atmospheric pressure the same or
      lower than 3 hours ago.
6 =   Decreasing, then steady, or decreasing then decreasing more
      slowly; atmospheric pressure now lower than 3 hours ago.
7 =   Decreasing (steadily or unsteadily) atmospheric pressure now lower
      than 3 hours ago.
8 =   Steady or increasing, then decreasing; or decreasing then
      decreasing more rapidly; atmospheric pressure now lower than 3
      hours ago.

Pressure Change Amount (ppp)

:
:
:

Net pressure change in tens, units, and tenths of millibars over the three hours prior to observation time. Range of values is from 000 to 999.

Course (D_s)

True direction of resultant displacement made good during the three hours preceding the time of observation.
0 =   Ship hove to
1 =   NE
2 =   E
3 =   SE
4 =   S
5 =   SW
6 =   W
7 =   NW
8 =   N
9 =   Unknown
/ =   Unreported

Speed (v_s)

Ship's average speed made good during last three hours.

0 =   0 knots
1 =   1 - 5 knots
2 =   6 - 10 knots
3 =   11 - 15 knots
4 =   16 - 20 knots
5 =   21 - 25 knots
6 =   26 - 30 knots
7 =   31 - 35 knots
8 =   36 - 40 knots
9 =   Over 40 knots
/ =   Not reported

Secondary Swell, Direction ($d_{w2}d_{w2}$)

Direction of secondary swell in tens of degrees. Use code table for Wind Direction (dd). Blanks = no observation attempted.

Secondary Swell, Period ($P_{w2}P_{w2}$)

Period of the secondary swell in whole seconds. See Period of Wind Wave (P_wP_w).

Secondary Swell, Height ($H_{w2}H_{w2}$)

The average height of larger well-formed secondary swell in half-meters. See Height of Wind Wave (H_wH_w).

Concentration of Ice (c_i)

Concentration or arrangement of sea ice in priority order.

Code   Ice

:
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18:

```
0 =   No sea ice in sight
1 =   Ship in open lead more than 1.0
      nautical mile wide, or ship in fast ice with boundary beyond limit
      of visibility
2 =   Sea ice present in concentrations less than 3/10 (3/8), open water
      or very open pack ice
3 =   4/10 to 6/10 (3/8 to less than 6/8), open pack ice
4 =   7/10 to 8/10 (6/8 to less than 7/8), close pack ice
5 =   9/10 or more, but not 10/10 (7/8 to less than 8/8), very close
      pack ice
6 =   Strips and patches of pack ice with open water between

7 =   Strips and patches of close or very close pack ice with areas of
      lesser concentration between
8 =   Fast ice with open water, very open or open pack ice to seaward of
      the ice boundary
9 =   Fast ice with close or very close pack ice to seaward of the ice
      boundary
/ =   Unable to report, because of darkness, lack of visibility, or
      because ship is more than 0.5 nautical mile away from ice edge
```

Stage of Development of Ice (S_i)

Development stage of sea ice.

```
0 =   New ice only (frazil ice, grease ice, slush, shuga)
1 =   Nilas or ice rind, less than 10 cm thick
2 =   Young ice (grey ice, grey-white ice), 10-30 cm thick
3 =   Predominantly new and/or young ice with some first-year ice
4 =   Predominantly thin first-year ice with some new and/or young ice
5 =   All thin first-year ice (30-70 cm thick)
6 =   Predominantly medium first-year ice (70-120 cm thick) and thick
      first-year ice (> 120 cm thick) with some thinner (younger) first-
      year ice
7 =   All medium and thick first-year ice
8 =   Predominantly medium and thick first-year ice with some old ice
      (usually more than 2 meters thick)
9 =   Predominantly old ice
/ =   Unable to report, because of darkness, lack of visibility or
      because only ice of land origin is visible or because ship is more
      than 0.5 nautical mile away from ice edge
```

Ice of Land Origin (b_i)

Descriptions of ice of land origin in order of coding priority.

```
Code  Ice
0 =   No ice of land origin
1 =   1-5 icebergs, no growlers or bergy bits
2 =   6-10 icebergs, no growlers or bergy bits
3 =   11-20 icebergs, no growlers or bergy bits
4 =   Up to and including 10 growlers with bergy bits -- no icebergs
5 =   More than 10 growlers and bergy bits -- no icebergs
6 =   1-5 icebergs with growlers and bergy bits
7 =   6-10 icebergs with growlers and bergy bits
8 =   11-20 icebergs with growlers and bergy bits
9 =   More than 20 icebergs with growlers and bergy bits -- a major
```

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```
           hazard to navigation
/ =        Unable to report, because of darkness, lack of visibility or
           because only sea ice is visible
```

Bearing of Ice Edge (D_i)

Bearing of closest part of principal ice edge.

```
0 =    Ship in shore or flaw lead
1 =    Principal ice edge towards NE
2 =    Principal ice edge towards E
3 =    Principal ice edge towards SE
4 =    Principal ice edge towards S
5 =    Principal ice edge towards SW
6 =    Principal ice edge towards W
7 =    Principal ice edge towards NW
8 =    Principal ice edge towards N
9 =    Not determined (ship in ice)
/ =    Unable to report, because of darkness, lack of visibility or
       because only ice of land origin is visible
```

Ice Situation and Trend (z_i)

Present ice situation and trend of conditions during past three hours in
order of coding priority.

```
0 =    Ship in open water with floating ice in sight
1 =    Ship in easily penetrable ice; conditions improving
2 =    Ship in easily penetrable ice; conditions not changing
3 =    Ship in easily penetrable ice; conditions worsening
4 =    Ship in ice difficult to penetrate; conditions improving
5 =    Ship in ice difficult to penetrate; conditions not changing
6 =    Ice forming and floes freezing together
7 =    Ice under slight pressure
8 =    Ice under moderate or severe pressure
9 =    Ship beset
/ =    Unable to report because of darkness or lack of visibility
```

FM 13 Code Version

```
Code   Version
0 =    Previous to FM 24-V
1 =    FM 24-V
2 =    FM 24-VI Ext.
3 =    FM 13-VII
4 =    FM 13-VIII
5 =    FM 13-VIII Ext.
6 =    FM 13-IX
7 =    FM 13-IX Ext.
8 =    FM 13-X, etc.
```

IMMT Version

```
0 =    Previous IMMT
1 =    IMMT-1 (this version)
2 =    IMMT-2 (next version)
3 =    IMMT-3, etc.
```

Quality Control Indicator for h (Q_1)

Code describing type of quality control that has been performed on the observation.

0 =   No quality control (QC) has been performed in this element
1 =   QC has been performed, element appears to be correct
2 =   QC has been performed, element appears to be inconsistent with other elements
3 =   QC has been performed, element appears to be doubtful
4 =   QC has been performed, element appears to be erroneous
5 =   The value has been changed as a result of QC
9 =   The value of the element missing

Quality Control Indicator for VV (Q_2)

See Q_1.

Quality Control Indicator for clouds (Q_3)

See Q_1.

Quality Control Indicator for dd (Q_4)

See Q_1.

Quality Control Indicator for ff (Q_5)

See Q_1.

Quality Control Indicator for TTT (Q_6)

See Q_1.

Quality Control Indicator for $T_dT_dT_d$ (Q_7)

See Q_1.

Quality Control Indicator for PPPP (Q_8)

See Q_1.

Quality Control Indicator for weather (Q_9)

See Q_1.

Quality Control Indicator for $T_wT_wT_w$ (Q_{10})

See Q_1.

Quality Control Indicator for P_wP_w (Q_{11})

See Q_1.

Quality Control Indicator for H_wH_w (Q_{12})

:
:

21:

See Q_1.

Quality Control Indicator for swell (Q_{13})

See Q_1.

Quality Control Indicator for i_RRRRt_R (Q_{14})

See Q_1.

Quality Control Indicator for a (Q_{15})

See Q_1.

Quality Control Indicator for ppp (Q_{16})

See Q_1.

Quality Control Indicator for D_s (Q_{17})

See Q_1.

Quality Control Indicator for v_s (Q_{18})

See Q_1.

Quality Control Indicator for $T_bT_bT_b$ (Q_{19})

See Q_1.

Quality Control Indicator for ship's position (Q_{20})

See Q_1.

3. **Start Date**: 19941099

4. **Stop Date**: Ongoing

5. **Coverage**: Worldwide, Maritime only.

6. **How to Order Data**:

    Ask NCDC's Climate Services about the cost of obtaining this data set.
    Phone: 828-271-4800
    FAX: 828-271-4876
    E-mail: **NCDC.Orders@noaa.gov**

7. **Archiving Data Center**:

    National Climatic Data Center
    Federal Building
    151 Patton Avenue
    Asheville, NC 28801-5001

8. **Technical Contact**:

   National Climatic Data Center
   Federal Building
   151 Patton Avenue
   Asheville, NC 28801-5001
   Phone: 828-271-4800

9. **Known Uncorrected Problems**: None.

10. **Quality Statement**: The IMMT data is considered to be of highest quality, with selected elements having been through rigorous quality control including extensive automatic and human review. Selected elements include date, time, quadrant, latitude, longitude, dry bulb temperature, dew point temperature, sea level pressure, sea temperature, and wet bulb temperature.

11. **Essential Companion Datasets**: None.

12. **References**

    Annex to Recommendation 13: Layout for the International Maritime Meteorological Tape, World Meteorological Organization, Geneva, Switzerland.

    Manual on Codes, World Meteorological Organization, International Codes, Secretariat of the World Meteorological Organization, Geneva, Switzerland, 1988.